

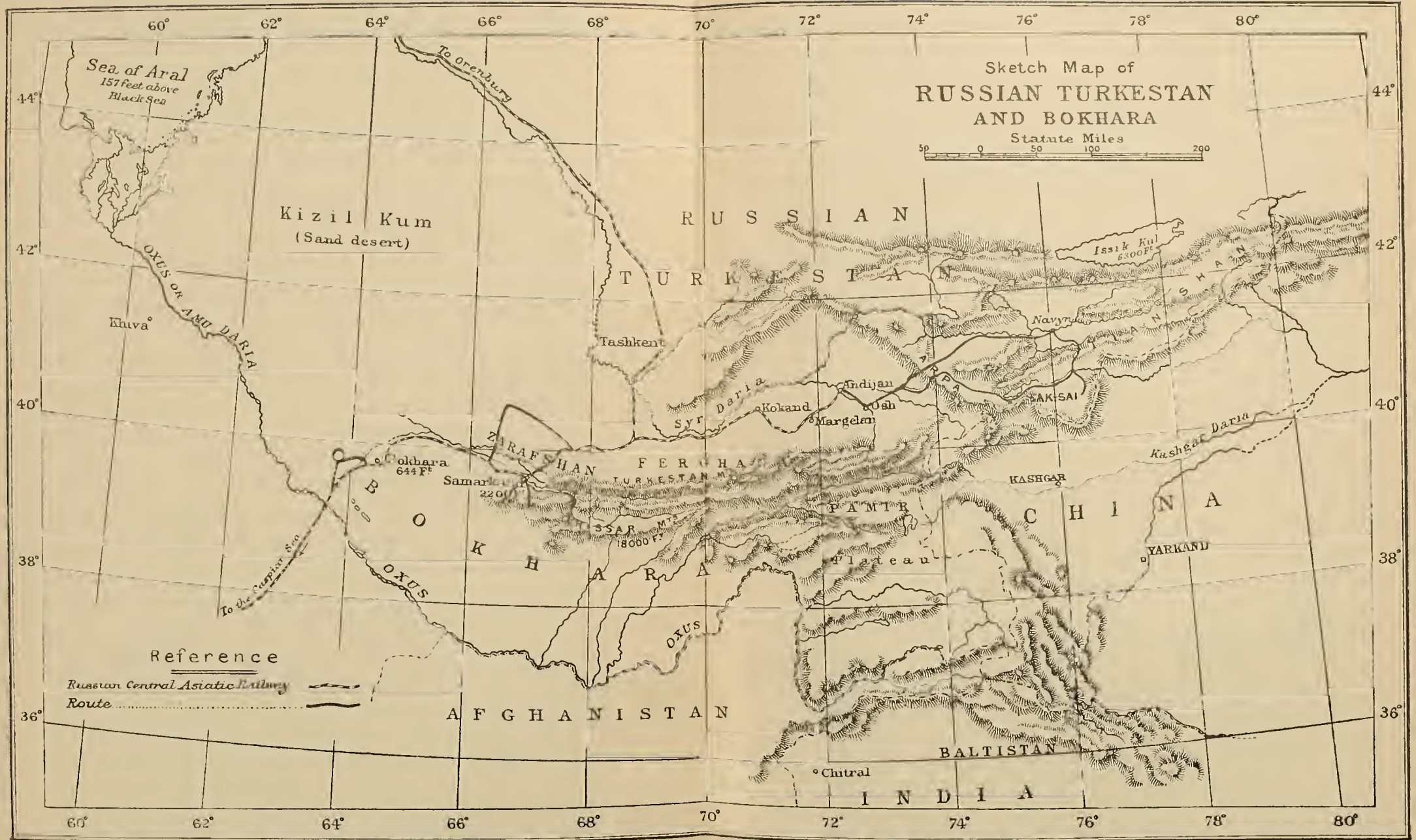
XX.—*On the Birds of the Zarafschan Basin in Russian Turkestan.* By DOUGLAS CARRUTHERS, F.R.G.S., M.B.O.U.

(Plates VII. & VIII.)

THE Russian possessions in Central Asia are very little known to Englishmen, and although a few travellers annually visit the Tian Shan mountains, their object is solely sport. I cannot find that any of them have added to our knowledge of the ornithology, or have made systematic collections of the fauna of that part of Central Asia. The region known, somewhat vaguely, by the name of Russian Turkestan (see Map, Pl. VII.), is situated north of Afghanistan and Chinese Turkestan, being bordered on the west by the Oxus and the Sea of Aral and on the east by Dzungaria, or western Mongolia. In this region I include the "protected native-state" of Bokhara, for it is a part of Russian Turkestan in everything but name.

This immense tract of country has been fairly well worked by Russian naturalists, such as Severtzoff, Prjevalsky, Fedchenko, and Zarudny. Their labours, however, seem to have been confined chiefly to Central and North-eastern Turkestan, in the regions most wealthy in bird- and animal-life, such as the forest-covered Tian Shan mountains and their outlying ranges. South-western Turkestan seems to have been somewhat neglected. I find a considerable difference between the fauna of North-western Turkestan and of the South-western district. The whole region might, indeed, be divided into two faunistic zones, namely—Turkestan north of the Syr Daria and the Ferghana, and the district lying south of this boundary, which is composed of the Zarafschan Basin and the Khanate of Bokhara. The former has a typical Central-Asiatic fauna, whilst the fauna of the latter belongs rather to Afghanistan.

As regards the flora the districts are equally distinct. The northern region is remarkable for its luxuriance, its dense forests of conifers, and its heavy rainfall, whilst the southern has a comparatively small rainfall and consequently the vegetation is very poor, except in the oases. Forests



are conspicuous by their absence, except for small groves of junipers at a high altitude in the mountains.

When I journeyed out to Turkestan in 1907, I intended to devote a year to this southern district, and to make a collection of birds from the low sandy deserts of Bokhara up to the high ranges that form the western declivities of the Pamirs.

I travelled by way of St. Petersburg, Moscow and Orenburg, through Russian Turkestan to Samarkand. At this town I made my headquarters, for it was situated on the middle portion of the Zarafschan River, and the desert and high mountains were equally within reach of it.

Here I met Mr. W. R. Rickmers, whose knowledge of Bokhara and whose travels in these countries are well known, and with whom I was engaged to travel. But, unluckily, in the end he was unable to accompany me, or to make any long journeys, so that most of my excursions were undertaken alone, and my labours were confined to the Zarafschan Valley. However, by making a systematic collection along the whole course of the Zarafschan I was able to get a very good idea of the ornithology of the whole district.

The Zarafschan is a typical river of Inner Asia. Having its source in the immense glaciers in the mountain-mass north-east of the Pamirs and flowing for two hundred miles through rugged mountain scenery, it at last reaches the open plain. Here, when set free from its mountain-home, it waters a wide valley—the Vale of Samarkand, and further out on the plain it creates the fertile area that surrounds Bokhara. Further still, having been deprived of most of its water for irrigation purposes, it flows on as a little stream into the sand-dunes, forms a swamp, and gradually evaporates. In its whole course it has a length of four hundred miles and its basin is self-contained.

The variety of scenery, of altitude, of climate, and consequently of flora and fauna, that such a valley presents, made it well worth a year's work. The climate is naturally one of extremes, in a region so far removed from the ocean. The winters are exceedingly cold, and bitter winds sweep

across the steppes. Spring comes suddenly, and during this season most of the rain falls; in summer the climate is hot, but dry and invigorating.

The yearly rainfall varies from 97·1 mm. near the Sea of Aral to 337·7 mm. at Samarkand. On the high plateaux the rainfall is again very small: the Pamirs have a yearly fall less than that of the Aral basin.

The altitude varies from 200 feet above the sea-level on the Bokharan Steppe to 20,000 feet on the ranges of Eastern Bokhara. But the life-zone ends at about 15,000 feet, which is the height of the average snow-line.

As regards physical features, on the low country we have an area of sand-dunes of the most utter desolation where no life exists, as well as an area of tamarisk and scrub-covered sand-hills and tamarisk-swamp. Above this is the hard steppe which runs from 500 feet up to 4,000 feet. These high steppes are a peculiarity of Asiatic scenery.

The cultivated area is confined to a district between 200 feet and 3,000 feet. Of course cultivation does exist at a higher altitude; orchards are to be seen high up the mountain valleys, and barley is grown as high as 8,000 feet, but the main area, where the large towns are situated and the vast proportion of produce is raised, lies at about 2,000 feet, where the rivers leave the mountains and render irrigation possible. This region includes practically the whole of the tree-area, there being no true forests.

The remaining half of the region is composed of mountain-ranges, very difficult of access. Out of the Bokharan steppes rise the immense ranges of Hissar and Turkestan, which border the Zarafschan on the north and south. The mountains might be divided into three areas—the low, rocky, barren, desert-ranges from 2,000 feet to 6,000 feet, the bush-clad or juniper forest area from 7,000 to 9,500 feet, and lastly the alpine region above 10,000 feet, varying up to 15,000 feet according to the snow-line. The juniper forest is confined to the area between 7,500 feet and 9,500 feet, and holds perhaps the most interesting fauna, the birds being mostly peculiar to

the forest-zone and typical of the high mountain-ranges of Central Asia.

A country thus situated midway between the Indian region and Siberia is naturally crossed in spring and autumn by a very large number of migrants. The resident birds in the Zarafschan Valley are comparatively rare; the majority are summer visitors from Afghanistan and India, but of the summer visitors some few go further north to breed, and only pass and re-pass the Zarafschan Valley. A smaller number still are winter visitors from Siberia. These consist mostly of waders and water-fowl, besides the Grey Crow and the Black-throated Thrush. The strongest wave of migration in spring takes place between the 28th of April and the 5th of May.

Arriving in Samarkand on the 1st September, 1907, I was in time to watch the autumnal migration and to obtain some of the common resident birds. As the winter advanced bird-life became very scarce in the cultivated area along the middle course of the Zarafschan. By the 1st of November the migration was over, and all the summer birds had passed south. The mountain region being closed during the winter, I devoted myself to mammal and bird collecting on the low deserts, west of Bokhara. Here there was a plentiful supply of ducks, geese, and waders, as well as of pheasants. Incredible numbers of wild-fowl assemble on the small lakes of the steppe during the winter, and good shooting is to be had.

Spring came early and with a rush. I met the northern migration at the lowest altitude, making a large collection at 2,000 feet, and then gradually moving up higher as the summer advanced. By doing this I caught all the summer visitors in their breeding haunts. By the middle of May I had finished the desert and the steppe-region, then a month was devoted to the cultivated areas at 2000 feet and the rocky foot-hills up to 7,000 feet. During this month the bulk of my collection was made.

In the middle of June I started work on the high mountains, and made a large collection in the Hissar range which borders the Zarafschan Valley on the south. On this range

in the month of June, bird-life did not extend to above 10,000 feet.

After this I made a journey to the plateaux of Arpa and Ak-sai, which are situated between the Pamirs and the Tian Shan. The Pamirs themselves are closed to travellers, and the only other locality that seemed to offer the same conditions and to contain the same fauna was this plateau district, situated north of Kashgar.

However, I did little collecting there, as bird-life was very scarce indeed, and the few birds met with were in full moult. But I saw sufficient to induce me to suppose that immediately north and north-east of the Ferghana and Pamirs, there is a very different fauna.

It is not necessary to give an itinerary, but I may say that I spent twelve months in the valley of the Zarafschan, moving up and down and making collections at the same places in different seasons. The whole series was composed of about 600 specimens, 523 of which have been purchased by the Trustees of the British Museum. These include examples of 147 species. A certain number of large and common birds I did not collect and a few rare ones I saw but never obtained. Notes on these are included as an appendix.

My best thanks are due to Mr. Ogilvie-Grant and Mr. Wells at the Natural History Museum, for their kindness in helping me to work out the collection and in identifying the specimens.

#### 1. CORVUS CORNIX.

*Corvus cornix* Sharpe, Cat. B. iii. p. 31.

♀. Samarkand. 27 Oct., 1907. No. 126.

♀. „ 17 Dec., 1907. No. 235.

A winter visitor only. The Hooded Crows arrive in the Zarafschan Valley from the north at the end of October. As the winter advances they increase in numbers, until the first week in April, when they suddenly begin to go north again. By the 10th of April there was not one to be seen anywhere.

## 2. CORVUS FRUGILEGUS.

*Trypanocorax frugilegus* Sharpe, Cat. B. iii. p. 9.

♂. Samarkand. 6 Nov., 1907. No. 159.

♀. „ 29 Oct., 1907. No. 142.

A common resident in the cultivated districts, which breeds at 600 ft. above the sea-level in the groves of birch-trees, the nests being sometimes placed only 20 ft. from the ground.

## 3. CORVUS COLLARIS.

*Corvus collaris* Sharpe, Cat. B. iii. p. 27.

♂. Samarkand. 10 Sept., 1907. No. 24.

♂. „ 25 April, 1908. No. 382.

♀. „ 22 Dec., 1907. No. 250.

An exceedingly common resident. My specimens evidently belong to the white-collared race of *C. monedula*, but the intensity of the white on the collar is very variable.

## 4. PICA LEUCOPTERA.

*Pica leucoptera* Sharpe, Cat. B. iii. p. 66.

♂. Samarkand. 11 Oct., 1907. No. 63.

♀. „ „ „ No. 62.

♀. „ 7 Oct., 1907. No. 57.

This is one of the commonest and most conspicuous birds in Turkestan. All over the cultivated districts, from 300 ft. up to 3000 ft., it is very numerous; at a higher altitude it becomes scarce. But I have seen it right up to the snow-line at 10,000 ft. in June, and it has been recorded on the Pamirs by Severtzoff. In habits it is very different from the European Magpie, the Turkestan bird being very tame and confiding, and always to be seen amongst the native houses and even in the bazaars of the towns.

They breed early; the young being fully fledged on the 30th May.

The amount of white on the wings, by which this bird is distinguished from *P. rustica*, is very variable. No. 57 has much white, there not being more than 0.2 in. of black at the tips of the quills, while Nos. 62 and 63 have as much as 0.5 in. and 0.6 in. of black at the tips, with a correspondingly less amount of white.

## 5. PYRRHOCORAX ALPINUS.

*Pyrrhonorax alpinus* Sharpe, Cat. B. iii. p. 149.

♂. Hissar Mts. 24 June, 1908. Nos. 602, 603.

♀. " " " " No. 601.

The Alpine Chough is very common at 9000 ft. in the Hissar Mts., but was never seen below 8000 ft.

Severtzoff mentions that the Common Chough (*P. graculus*) is found in this district and in the Pamirs, but I never came across it. The northern range of *P. alpinus* is terminated by the Tian Shan Mts., but *P. graculus* extends further north into Siberia.

## 6. STURNUS PURPURASCENS.

*Sturnus purpurascens* Sharpe, Cat. B. xiii. p. 37.

♂. Samarkand. 29 April, 1908. No. 384.

♂. Bokhara. 14 March, 1908. Nos. 282, 286, 287, 288.

Imm. ♂. Samarkand. 17 Nov., 1907. No. 187.

Imm. ♂. " 29 Oct., 1907. No. 132.

A resident in the cultivated lands; assembling in very large flocks in October, and roosting in the reed-beds that border the Zarafschan.

Although Severtzoff mentions *S. vulgaris* as wintering in the Zarafschan district, I never obtained it.

## 7. PASTOR ROSEUS.

*Pastor roseus* Sharpe, Cat. B. xiii. p. 63.

♂. Samarkand. 29 April, 1908. No. 381.

I obtained only one example of the Rose-coloured Starling, which was in a flock of Common Starlings. But when the locusts appeared in the neighbourhood of Samarkand large flocks of these birds were also to be seen preying on the locusts.

Severtzoff mentions that he observed large flocks of *Pastor roseus* suddenly appearing in the neighbourhood of Karakul, on the Pamirs, following flights of locusts.

## 8. ORIOLUS GALBULA.

*Oriolus galbula* Sharpe, Cat. B. iii. p. 191.

♂. Samarkand. 12 Sept., 1907. No. 37.

Imm. ♂. Samarkand. 13 Sept., 1907. No. 39.



♀. Bokhara. 20 May, 1908. No. 492.

Imm. ♀. Samarkand. 8 Sept., 1907. No. 8.

This is a summer migrant, arriving at the end of April, and breeding in May in the cultivated areas up to an altitude of 3000 ft.

This is the common Oriole of Turkestan, *Oriolus kundoo* being much more rare.

#### 9. ORIOLUS KUNDOO.

*Oriolus kundoo* Sharpe, Cat. B. iii. p. 194.

♂. Samarkand. 6 May, 1908. No. 421.

Out of a large number of Orioles collected, only one proved to belong to this species, all the others being *Oriolus galbula*.

#### 10. EMBERIZA MILIARIA.

*Miliaria miliaria* Sharpe, Cat. B. xii. p. 552.

♂. Samarkand. 3 Jan., 1908. No. 261.

A rare bird in this country. I obtained only one example during the year.

#### 11. EMBERIZA LUTEOLA.

*Emberiza luteola* Sharpe, Cat. B. xii. p. 506.

♂. Samarkand. 3 May, 1908. Nos. 409, 410, 411, 412.

♀. " " " " No. 413.

This Bunting arrives in great numbers during the first week of May. In the summer it is one of the most conspicuous birds of the cultivated area, between 2000 ft. and 3000 ft.

#### 12. EMBERIZA HORTULANA.

*Emberiza hortulana* Sharpe, Cat. B. xii. p. 530.

♂. Samarkand. 19 April, 1908. Nos. 349, 350.

♀. Bokhara. 20 May, 1908. No. 472.

A summer migrant, arriving in April, and found as high as 6000 ft.

#### 13. EMBERIZA BUCHANANI.

*Emberiza buchanani* Sharpe, Cat. B. xii. p. 533.

♂. Samarkand. 1 May, 10 May, 1908. Nos. 391, 446, 447.

♂. Samarkand. 1 June, 1908. No. 502.

(Sex doubtful). Samarkand. 1 May, 1908. No. 392.

This is a summer migrant to the rock-country between 3000 ft. and 5000 ft. It is never found above 6000 ft.

14. *EMBERIZA LEUCOCEPHALA*.

*Emberiza leucocephala* Sharpe, Cat. B. xii. p. 549.

♀. Samarkand. 25 Oct., 17 Nov., 1907. Nos. 123, 124, 190.

15. *EMBERIZA STEWARTI*.

*Emberiza stewarti* Sharpe, Cat. B. xii. p. 547.

♂. Samarkand. 10 May, 1908. No. 445.

♂. „ 3 May, 1908. Nos. 406, 407.

(Sex doubtful). Samarkand. 3 May, 1908. No. 408.

♂. Samarkand. 1 June, 1908. No. 501.

Found in fair numbers, in summer, in the rocky foot-hills between 3000 ft. and 5000 ft., but never ascending above 6000 ft.

16. *EMBERIZA CIA*.

*Emberiza cia* Sharpe, Cat. B. xii. p. 537.

♂. Samarkand. 25 April, 1908. Nos. 373, 374, 375, 376, 377, 378.

♂. Hissar Mts. 20 June, 1908. No. 541.

This Bunting arrives in great numbers in mid-April, and is common at 5000 ft., but does not descend lower. I also found it at 10,000 ft. It breeds at a higher level than any other species of the genus: I obtained it nesting at 9000 ft. in June.

17. *EMBERIZA SCHÆNICLUS*.

*Emberiza schæniclus* Sharpe, Cat. B. xii. p. 480.

♂. Bokhara. 19 March, 1908. No. 299.

♂ (winter plumage). Bokhara. 7, 14 Nov. and 4 Dec., 1907. Nos. 167, 173, 210.

♂ ♀ (winter plumage). Samarkand. 19 Dec., 1907. Nos. 241, 243.

♀. Bokhara. 14 Nov., 4 and 8 Dec., 1907. Nos. 174, 209, 216.

A common winter visitor to the tamarisk-jungles and

reed-beds along the Zarafschan River, from 200 ft. to 2000 ft. After the middle of March I never saw any of these birds, but during the winter they were exceedingly common.

18. *CARDUELIS MAJOR*.

*Carduelis major* Sharpe, Cat. B. xii. p. 189.

♂. Samarkand. 10 Feb., 1908. No. 276.

This specimen belongs to the large race of the species, having a wing-measurement of 3·5 in.

19. *CARDUELIS CANICEPS*.

*Carduelis caniceps* Sharpe, Cat. B. xii. p. 189.

♂. Hissar Mts. 20 June, 1908. Nos. 584, 585.

♀. Samarkand. 11 June, 1908. No. 265.

This species seems to be confined to the mountainous country. I only found it above 5000 ft., and as high as 9000 ft. in the Hissar Mts.

20. *SERINUS PUSILLUS*.

*Serinus pusillus* Sharpe, Cat. B. xii. p. 373.

♂. Hissar Mts. 14-20 June, 1908. Nos. 535, 549, 550,  
551.

♀. „ „ 14-20 June, 1908. Nos. 527, 547, 548.

This is a very common bird at 9500 ft. in the hill-country. It searches for food in large flocks on the alpine meadows, and breeds in the juniper-groves. The nest is placed on a branch about twelve feet from the ground, and is made entirely of the bark of the juniper, lined with wool and hair. On the 14th of June the females were sitting; four eggs, apparently, make a full clutch.

These birds are very tame, and were often to be seen sitting on the guy-ropes of my tent; when I took their eggs they fearlessly attacked me.

21. *ACANTHIS FRINGILLIROSTRIS*.

*Acanthis fringillirostris* Sharpe, Cat. B. xii. p. 244.

♂ ♀. Eastern Ferghana. 28 July, 1908. Nos. 532, 533.

This was one of the few birds in my collection obtained

outside the Zarafshan Valley. I saw a few at 4000 ft. on the western declivities of the Ak-sai Plateau, which is the extreme south-west corner of the Tian Shan Range.

22. ACANTHIS BREVIROSTRIS.

*Acanthis brevirostris* Sharpe, Cat. B. xii. p. 238.

♂. Samarkand. 3 Jan., 1908. No. 263.

Small flocks of this bird were seen on one occasion on the open steppe in mid-winter.

23. MYCEROBAS CARNEIPES.

*Pycnorhamphus carneipes* Sharpe, Cat. B. xii. p. 47.

♂. Hissar Mts. 18 June, 1908. No. 563.

♀. „ 18-23 June, 1908. Nos. 564, 565, 594.

This is a rare bird in the Zarafshan district, chiefly on account of the absence of forests. At 9500 ft. there were a few to be found in the juniper-groves. They were exceedingly wild and shy. On the wing they resemble a Hawfinch in flight.

24. PASSER INDICUS.

*Passer indicus* Sharpe, Cat. B. xii. p. 311.

♂. Samarkand. 3 May, 1908. Nos. 414, 415, 416.

The distribution of this House-Sparrow in Turkestan is interesting. Formerly it was only found along the Post-roads, the common House-Sparrow of the towns being *Passer montanus*. But, apparently, *P. indicus* is extending its range and will perhaps eventually drive out *P. montanus*. *P. indicus* is now to be seen in the towns mixed up with flocks of *P. montanus*.

In out-of-the-way mountain valleys *P. indicus* breeds in the trees, but in villages where *P. montanus* is absent, it utilises the native houses.

25. PASSER MONTANUS.

*Passer montanus* Sharpe, Cat. B. xii. p. 301.

♂. Samarkand. 4 Nov., 1907. No. 155.

Imm. ♂. Samarkand. 11 Sept., 1907. No. 32.

Imm. (sex doubtful). Samarkand. 11 Sept., 1907. No. 33.

♀. Samarkand. 30 Oct., 4 Nov., 1907. Nos. 149, 154.

This is the common House-Sparrow of Turkestan. It is abundant in the towns of the cultivated area.

26. *PASSER HISPANIOLENSIS.*

*Passer hispaniolensis* Sharpe, Cat. B. xii. p. 317.

♂. Bokhara. 4, 8 Dec., 1907. Nos. 202, 217, 219, 221.

♂. „ 14 Nov., 1907. No. 182.

♀. „ 4, 8 Dec., 1907. Nos. 203, 204, 222,  
223, 224.

This Sparrow is resident in the reed-beds of the lower Zarafshan Valley at 200 ft.

27. *PASSER AMMODENDRI.*

*Passer ammodendri* Sharpe, Cat. B. xii. p. 337.

♂. Bokhara. 14 Nov., 1907. No. 181.

I never visited the saxaul forests on the sand-wastes of Transcaspia, so I never met with the Saxaul Sparrow in its true haunts. This single specimen I obtained on the lower Zarafshan, out of a flock of *P. hispaniolensis*.

28. *PETRONIA STULTA.*

*Petronia petronia* Sharpe, Cat. B. xii. p. 289.

♂. Samarkand. 25 April, 1908. Nos. 361, 362, 363.

Large flocks of these birds haunt the country just below the snow-line, moving higher up as the snow melts.

The testes of these specimens were much enlarged, and the birds are probably early breeders.

29. *MONTIFRINGILLA ADAMSI.*

*Montifringilla adamsi* Sharpe, Cat. B. xii. p. 261.

♂. Ak-sai Plateau. 20 Aug., 1908. No. 607.

I obtained one example of Adams' Snow-Finch at a height of 12,000 ft. on the Ak-sai Plateau, at the extreme south-west corner of the Tian Shan. The birds were very common there, and in every stage of plumage. But I have also seen them at 5000 ft. on the Hissar Mts. during a very cold spell in mid-winter.

The Ak-sai Plateau is, probably, the northern limit of *M. adamsi*. Severtzoff does not mention it at all in his Fauna of Turkestan, Cashmere and Tibet being the true

habitat of this Snow-Finch. But the bird which Severtzoff obtained in the Pamir, and which he designates as *Montifringilla alpicola*, probably belongs to this species.

30. MONTIFRINGILLA SORDIDA.

*Montifringilla sordida* Sharpe, Cat. B. xii. p. 266.

♂. Hissar Mts. 14, 18 June, 1908. Nos. 526, 539, 553, 554.

♀. Hissar Mts. 16 June, 1908. No. 555.

This Finch is found in large flocks along the edge of the snows at 10,000 ft. in June.

31. FRINGILLA MONTIFRINGILLA.

*Fringilla montifringilla* Sharpe, Cat. B. xii. p. 178.

♀. Samarkand. 14 Dec., 1908. No. 233.

Only one example of the Brambling was obtained, at 5000 ft. in the hills near Samarkand.

32. CARPODACUS ERYTHRINUS.

*Carpodacus erythrinus* Sharpe, Cat. B. xii. p. 391.

♂. Samarkand. 30 April, 3 May, 1908. Nos. 387, 396, 401.

♀. Samarkand. 29 April, 6 May, 1908. Nos. 383, 402, 438.

♀. Samarkand. 10 Sept., 1907. No. 26.

A summer migrant, arriving in great number the first week in May, but going further north than the Zarafschan Valley to breed.

33. CARPODACUS GRANDIS.

*Carpodacus grandis* Sharpe, Cat. B. xii. p. 404.

♂. Hissar Mts. 16-20 June, 1908. Nos. 546, 552, 561.

♂. Samarkand. 10 Feb., 1908. No. 274.

♀. Hissar Mts. 18-20 June, 1908. Nos. 540, 545, 551, 560.

This species is resident in the juniper-forests at 9000 ft., where it breeds in the middle of June. In hard weather during the winter it occasionally descends as low as 2000 ft. in the cultivated area.

## 34. RHODOPECHYS SANGUINEA.

*Rhodopechys sanguinea* Sharpe, Cat. B. xii. p. 280.

♂. Hissar Mts. 25 April, 1908. Nos. 366, 367.

♀. „ „ „ „ No. 368.

Found, rarely, on the edge of the snow at 7000 ft. A very shy wild bird, with a curious flight, somewhat like that of a Woodpecker.

## 35. ERYTHROSPIZA MONGOLICA.

*Erythrospiza mongolica* Sharpe, Cat. B. xii. p. 287.

♂. Samarkand. 12, 14 April, 1908. Nos. 331, 337.

♀. „ 27 Oct., 1907. Nos. 129, 130.

This is a somewhat rare bird, chiefly haunting the loëss ravines, but also found at 5000 ft. in the rock-country.

## 36. OTOCORYS ALBIGULA.

*Eremophila alpestris albigula* Hartert, Vög. Pal. Fauna, i. p. 262.

♂. Hissar Mts. 25 April, 1908. Nos. 372, 369.

♂. „ 24 June, 1908. No. 599.

♀. „ 25 April, 1908. Nos. 370, 371.

This species is only found above 7000 ft. in the mountains, frequenting the alpine pastures just below the snow.

## 37. MELANOCORYPHA BIMACULATA.

*Melanocorypha bimaculata* Sharpe, Cat. B. xiii. p. 555.

♂. Samarkand. 10-28 May, 1908. Nos. 442, 443, 499.

This summer migrant to the Zarafschan Valley arrives during the first week in May in the neighbourhood of Samarkand, and breeds in the corn-fields. It is a very local bird, and appears to be confined to the cultivated area at about 2000 ft.

## 38. ALAUDA CANTARELLA.

*Alauda arvensis cantarella* Hartert, Vög. Pal. Fauna, i. 1905, p. 246.

♂. Samarkand. 27 Oct., 1907. Nos. 127, 128.

♀. „ 23 Sept., 1907. No. 48.

Sex doubtful. Bokhara. 14 Nov., 1907. No. 177.

All the Common Skylarks were winter visitors in Zarafschan. In the summer their place was taken by great numbers of Indian Skylarks, which come north to the Zarafschan Valley to breed. All my specimens belong to the "mealy form."

39. *ALAUDA INCONSPICUA*.

*Alauda gulgula inconspicua* Hartert, Vög. Pal. Fauna, i. p. 249.

♂. Bokhara. 18-20 May, 1908. Nos. 479, 458, 487.

This Lark is a summer visitor to the low steppe, breeding in the cultivated lands at 200 ft. I never found it higher up than 1000 ft.

40. *GALERIDA MAGNA*.

*Galerida cristata magna* Hartert, Vög. Pal. Fauna, i. p. 235.

♂. Samarkand. 17 Nov., 22 Sept., 1907. Nos. 191, 46.

♀. „ 18 Nov., 23 Sept., 1907. Nos. 197, 50.

All the Crested-Larks that I collected belong to the large, pale race called *G. magna* by Hume. My specimens agree with those in the British Museum from Kashgar and Tashkent.

41. *CALANDRELLA BRACHYDACTYLA*.

*Calandrella brachydactyla brachydactyla* Hartert, Vög. Pal. Fauna, i. p. 215.

♂. Samarkand. 25 April, 1908. Nos. 364, 365.

♂. Bokhara. 20-22 March, 1908. Nos. 309, 474, 308, 310.

♀. „ 22 March, 1908. No. 311.

42. *CALANDRELLA PISPOLETTA*.

*Calandrella pispoletta* Sharpe, Cat. B. xiii. p. 587.

♂. Bokhara. 14 Nov., 1907. Nos. 178, 179.

This specimen belongs to the pale race of the species from the Oxus deserts.



## 43. CALANDRELLA LEUCOPHÆA.

*Calandrella leucophæa* Hartert, Vög. Pal. Fauna, i. p. 219.

♀. Bokhara. 14 Nov., 1907. No. 180.

This desert form of *C. pispoletta* is a somewhat rare bird. My specimen agrees exactly with those that Severtzoff obtained in the same district. The outer tail-feathers are pure white, except for a dot at the base of the inner web, which distinguishes it from *C. adamsi*.

## 44. MOTACILLA ALBA.

*Motacilla alba* Sharpe, Cat. B. x. p. 464.

♂. Bokhara. 24 March, 1908. No. 323.

♂ imm. Samarkand. 18 Oct., 1907. No. 88.

♀ imm. „ 14 Sept., 18 Oct., 1907. Nos.  
43, 89.

## 45. MOTACILLA PERSONATA.

*Motacilla personata* Sharpe, Cat. B. x. p. 479.

♂. Samarkand. 25 April, 1908. No. 353.

♂ imm. Samarkand. 4 Nov., 1907. No. 153.

## 46. MOTACILLA MELANOPE.

*Motacilla melanope* Sharpe, Cat. B. x. p. 497.

♂. Samarkand. 3 May, 25 April, 1908. Nos. 403, 356.

♂ imm. Samarkand. 21 Oct., 1907. No. 97.

## 47. MOTACILLA FELDEGGI.

*Motacilla feldeggi* Sharpe, Cat. B. x. p. 527.

♂. Bokhara. 22 March, 1908. Nos. 315, 317.

♂. „ 18 May, 1908. No. 459.

♀ imm. Samarkand. 8 Sept., 1908. No. 6.

This is a fairly common bird in the marshlands of the lower Zarafschan. Flocks of these Wagtails are often to be seen following the droves of sheep and feeding amongst them. They are summer migrants to the Zarafschan Valley.

## 48. ANTHUS TRIVIALIS.

*Anthus trivialis* Sharpe, Cat. B. x. p. 543.

♂. Samarkand. 8 Sept., 11 Oct., 1907. Nos. 4, 58.

♂. „ 14 April, 1908. No. 339.

Sex doubtful. Samarkand. 8 Sept., 1907. No. 2.

## 49. ANTHUS SPIPOLETTA.

*Anthus spipoletta* Sharpe, Cat. B. x. p. 593.

♂. Samarkand. 18 Nov., 1907. No. 196.

♂. Bokhara. 4 Dec., 1907. No. 211.

## 50. ANTHUS CAMPESTRIS.

*Anthus campestris* Sharpe, Cat. B. x. p. 569.

♂. Samarkand. 1 May–10 May, 1908. Nos. 448, 389,  
390.

♂. „ 24 Oct., 1907. No. 117.

## 51. CERTHIA HIMALAYENSIS.

*Certhia himalayensis* Gadow, Cat. B. viii. p. 327.

♂. Samarkand. 21 Nov., 1907. No. 198.

♂. Hissar Mts. 20 June, 1908. No. 568.

♀. Samarkand. 22 Dec.–2 Feb., 1907–8. Nos. 270,  
251.

The Tree-Creeper is a rather rare resident in the Zarafschan Valley. It breeds at 9000 ft. in the juniper-groves and descends to the cultivated area around Samarkand in the winter.

This is a Himalayan bird which extends as far north as the Zarafschan, but no further, north of this its place being taken by *C. familiaris*. According to their locality, my specimens ought to belong to the north-western race of *C. himalayensis*, named by Severtzoff *C. tenuira*, distinguished by its greater size, paler upper parts and whiter under parts. But my specimens agree exactly in colour and in size with birds from Kohat and Astor, and do not come up to the measurements of specimens from Samarkand in the British Museum.

The culmens vary between .7 and .9 inch, and the wing measurements vary between 2.6 and 2.7 inches.

## 52. TICHODROMA MURARIA.

*Tichodroma muraria* Gadow, Cat. B. viii. p. 331.

♂. Samarkand. 23 Oct., Nov., 1 Jan., 1907–8. Nos. 107, 134, 201, 259.

The Wall-Creeper is very common in the plains of Samarkand and in the rocky foot-hills in winter: it is much less often seen in summer.

53. *SITTA TEPHRONOTA.*

*Sitta tephronota* Sharpe, Ann. Mag. Nat. Hist. ser. 4, x. p. 450.

♂. Hills near Samarkand. 11-15 Oct., 1907. Nos. 76, 77.

♂. " " " 25 April, 1 June, 1908.  
Nos. 357, 503, 504.

♀. " " " 19 April, 1908. No. 345.

♀. Hissar Mts. 20 June, 1908. No. 587.

Sex doubtful. Hills near Samarkand. 15 Oct., 1907. No. 76.

This Nuthatch is a very common resident in the rocky foot-hills between 3000 and 7000 ft., but rarely goes above this altitude. On one occasion I found it at 8000 ft. It breeds at the end of April.

54. *REGULUS HIMALAYENSIS.*

*Regulus himalayensis* Gadow, Cat. B. viii. p. 81.

♂. Samarkand. 4 Nov.-19 Dec., 1907. Nos. 185, 156, 157, 236.

♀. Samarkand. 16 Nov.-19 Dec., 1907. Nos. 186, 237.

This Gold-Crest is a winter visitor to the Vale of Samarkand; its summer haunts are probably the forests of the Tian Shan Mts.

55. *LEPTOPECILE SOPHIÆ.*

*Leptopæcile sophiæ* Gadow, Cat. B. viii. p. 86.

♂. Hissar Mts. 14-24 June, 1908. Nos. 530, 572, 573, 574, 583.

♀. Hissar Mts. 18 June, 1908. No. 538.

This bird is peculiar to the juniper-groves at 8000 and 9000 ft. in the mountains, and is generally found in small flocks.

It must breed very early, for on the 18th of June the young were fully fledged and flying about. I could not

obtain any very good specimens owing to the fact that all the birds were either young or in full moult.

This is a Cashmere species, ranging into Turkestan as far as the Tian Shan Mts.

56. *PARUS BOKHARENSIS.*

*Parus bokharensis* Gadow, Cat. B. viii. p. 16.

♂. Samarkand. 9-13 Sept., 1907. Nos. 15, 21, 22, 40.

♀. „ 10-14 Sept., 1907. Nos. 23, 42.

This Tit is a very common resident in the cultivated areas, not going above 4000 ft. It has a great variety of notes. On the 30th of May, I found a nest of young birds in a hole in a poplar tree only one foot above the ground. This large race of *Parus cinereus* has a total length of from 5·7 to 6 inches, and a wing-measurement varying between 2·6 and 2·75 inches.

57. *PARUS FLAVIPECTUS.*

*Parus flavipectus* Gadow, Cat. B. viii. p. 11.

♂. Samarkand. 28 Dec., 1907. No. 256.

♂. „ 25 Jan., 1908. No. 268.

♀. „ 28 Dec., 1907. Nos. 257, 258.

Sex doubtful. Samarkand. 25 Jan., 1907. No. 269.

A somewhat rare resident in the cultivated regions, generally seen in small flocks of five or six individuals.

58. *PARUS RUFONUCHALIS.*

*Parus rufonuchalis* Gadow, Cat. B. viii. p. 29.

♂. Hissar Mts. 14-23 June, 1908. Nos. 528, 537, 582.

♀. Hissar Mts. 14-18 June, 1908. Nos. 529, 536.

This Tit is peculiar to the juniper-forests from 8000 to 9000 ft. in the Hissar Mts., never descending lower. It is a very silent bird for a Tit, and its note, when uttered, is very soft and weak. The specimens were in full moult and the young were fledged.

## 59. LANIUS LEUCOPTERUS.

*Lanius leucopterus* Grant, Nov. Zool. ix. p. 455.

♂. Samarkand. 26 Dec., 1907. No. 255.

## 60. LANIUS HOMEYERI.

*Lanius homeyeri* Grant, Nov. Zool. ix. p. 454.

♀. Bokhara. 24 March, 1908. No. 320.

♀ imm. Bokhara. 4 Dec., 1907. No. 205.

♀ imm. Samarkand. 3 Jan., 1908. No. 260.

## 61. LANIUS DEALBATUS.

*Lanius dealbatus* Grant, Nov. Zool. ix. p. 458.

♀ imm. Bokhara. 24 March, 1908. No. 321.

## 62. LANIUS MINOR.

*Lanius minor* Grant, Nov. Zool. ix. p. 470, Dec. 1902.

♂. Samarkand. 1 June, 1908. Nos. 510, 511, 512.

♀. „ 10 May, 1908. No. 439.

This is a summer migrant, arriving during the first week in May in large numbers. It breeds in the cultivated area in June.

## 63. LANIUS COLLURIO.

*Lanius collurio* Grant, Nov. Zool. ix. p. 471, Dec. 1902.

♂. Bokhara. 15-20 May, 1908. Nos. 491, 456.

♂ imm. Samarkand. 8-11 Sept., 1907. Nos. 7, 11.

♀. Bokhara. 15 May, 1908. No. 457.

A summer migrant, commoner on the steppe at 600 ft. than in the cultivated area (2000 ft.).

## 64. LANIUS PHÆNICUROIDES.

*Lanius phænicuroides* Grant, Nov. Zool. ix. p. 12.

♂. Samarkand. 6 May, 1908. No. 422.

♂ jr. „ 15 Oct., 1907. No. 69.

## 65. LANIUS ERYTHRONOTUS.

*Lanius erythronotus* Grant, Nov. Zool. ix. p. 477.

♂ ♀. Samarkand. 1 June, 1908. Nos. 514, 515.

A summer migrant to the cultivated area only; not to be met with on the open country.

In the first week in June these birds were laying. Their nests were built in the poplars, about thirty feet from the

ground, and were made of fresh green grass and moss. In the nests I found all sorts of odds and ends such as bits of string and cloth and sheeps' wool.

66. SYLVIA CINEREA.

*Sylvia cinerea* Seebohm, Cat. B. v. p. 8.

♂. Samarkand. 8 Sept., 1907. No. 5.

♂. Bokhara. 20 May, 1908. No. 473.

♀. " " " No. 476.

67. SYLVIA AFFINIS.

*Sylvia affinis* Seebohm, Cat. B. v. p. 19.

♂. Samarkand. Sept. 1907. Nos. 3, 31.

♂. " May, 1908. Nos. 397, 431.

♀. " Sept. 1907. No. 12.

♀. " May, 1908. No. 432.

68. SYLVIA MINUSCULA.

*Sylvia minuscula* Seebohm, Cat. B. v. p. 20.

♂. Bokhara. 23 May, 1908. No. 319.

♀. Samarkand. 3 May, 1908. No. 404.

69. SYLVIA NANA.

*Sylvia nana* Seebohm, Cat. B. v. p. 26.

♂. Bokhara. 14-23 March, 1908. Nos. 283, 318.

This little Warbler is found on the low-lying deserts of Bokhara in small numbers. It is a summer migrant, arriving early in March.

70. PHYLLOSCOPUS TRISTIS.

*Phylloscopus tristis* Seebohm, Cat. B. v. p. 63.

♂. Samarkand. 11 Oct., 1907. No. 60.

♂. Samarkand. 5-19 April, 1908. Nos. 325, 326, 327, 328, 351.

♀. Samarkand. 29 Oct., 1907. No. 145.

♀. " 6 May, 1908. No. 433.

71. PHYLLOSCOPUS HUMIL.

*Phylloscopus humii* Seebohm, Cat. B. v. p. 67.

♂. Samarkand. 29 Oct., 1907. No. 146.

♂. Hissar Mts. 14 June, 1908. No. 534.

♀. „ 18, 20 June, 1908. Nos. 562, 566.

I found this bird breeding at 9500 ft. in the juniper-groves of the Hissar Mts. The nest was domed and was made of grass, without any lining except a few hairs. It was placed on the ground under a small bush. On the 19th of June the full clutch of five eggs was hard-set.

72. PHYLLOSCOPUS VIRIDANUS.

*Phylloscopus viridanus* Seebohm, Cat. B. v. p. 44.

♂. Samarkand. 4 May, 1908. No. 420.

♂. Bokhara. 20 May, 1908. Nos. 477, 478, 498.

73. PHYLLOSCOPUS OCCIPITALIS.

*Phylloscopus occipitalis* Seebohm, Cat. B. v. p. 50.

♂. Hissar Mts. 23 June, 1908. No. 593.

74. HYPOLAIS RAMA.

*Hypolais rama* Seebohm, Cat. B. v. p. 84.

♂. Samarkand. 6 May-5 June, 1908. Nos. 427, 506, 517, 520, 521, 522.

♂. Bokhara. 18-20 May, 1908. Nos. 463, 464, 465, 466, 481, 485.

♀. Samarkand. 6 June, 1908. No. 523.

♀. Bokhara. 20 May, 1908. Nos. 482, 486.

This is one of the commonest Warblers in the low tamarisk jungles, and in the cultivated valleys up to 2000 ft.

75. HYPOLAIS CALIGATA.

*Hypolais caligata* Seebohm, Cat. B. v. p. 85.

♀. Bokhara. 18-28 May, 1908. Nos. 462, 500.

♂. „ 20 May, 1908. No. 475.

This is a summer migrant to the low deserts, found in very barren localities.

76. AEDON FAMILIARIS.

*Sylvia familiaris* Seebohm, Cat. B. v. p. 36.

♂. S.W. of Bokhara. 18-20 May, 1908. Nos. 461, 469, 470, 471, 483, 484.

♀. S.W. of Bokhara. 18 May, 1908. No. 460.

This bird arrives in great numbers on the Bokharan deserts in the middle of May. It does not seem to extend above 1000 ft., but is very numerous on the tamarisk-covered sand-hills at 200 ft.

77. ACROCEPHALUS AGRICOLA.

*Acrocephalus agricola* Seebohm, Cat. B. v. p. 106.

♀. Samarkand. 6 May, 1908. No. 426.

A summer migrant to the cultivated areas.

78. ACROCEPHALUS DUMETORUM.

*Acrocephalus dumetorum* Seebohm, Cat. B. v. p. 104.

♂. Samarkand. 6 May-4 June, 1908. Nos. 424, 425, 449, 516.

♀. Samarkand. 6 June, 1908. No. 524.

This is a summer migrant to the cultivated valleys at 2000 ft.

79. MONTICOLA SAXATILIS.

*Monticola saxatilis* Seebohm, Cat. B. v. p. 313.

♂. Samarkand. 19 April, 1908. No. 344.

♀. Bokhara. 20 May, 1908. No. 494.

This summer migrant arrives in the first week of May.

80. MONTICOLA CYANUS.

*Monticola cyanus* Seebohm, Cat. B. v. p. 316.

♂. Samarkand. 10 May, 1908. No. 440.

♀. „ 10 May, 1908. No. 441.

A summer migrant, arriving during the first week in May.

81. TURDUS VISCIVORUS.

*Turdus viscivorus* Seebohm, Cat. B. v. p. 194.

♀. Samarkand. 6 March, 1908. No. 278.

♀. Hissar Mts. 24 June, 1908. No. 600.

The Missel Thrush is very rare in the Zarafschan Valley. It breeds at 9000 ft. in the Hissar Mts., building its nest in the juniper trees. On the 24th of June the birds were feeding their young.

82. TURDUS PILARIS.

*Turdus pilaris* Seebohm, Cat. B. v. p. 205.



♂. 100 miles north of Samarkand. 3 Jan., 1908. No. 262.

A rare winter visitor to Zarafshan.

### 83. TURDUS ATRIGULARIS.

*Turdus atrigularis* Seebohm, Cat. B. v. p. 267.

♂. Samarkand. 6 Feb., 1908. No. 272.

♂. „ 7 Oct., 1907. No. 54.

♂. „ 25 Oct., 1907. No. 121.

♂. „ 11 Oct., 1907. No. 64.

♀. „ 2 Feb., 1908. No. 271.

This Thrush arrives in the Zarafshan Valley in immense numbers during the month of October. It is fairly common all the winter in the cultivated areas, but by the end of February the birds have left on their northern migration. Although many winter in the neighbourhood of Samarkand, the majority pass further southwards. The strongest migration across the valley takes place during the middle of October, southwards; and during the middle of March, northwards.

### 84. TURDUS MERULA.

*Merula merula* Seebohm, Cat. B. v. p. 235.

♂. Samarkand. 16 Nov., 1907. No. 184.

♂. „ 22, 26 Dec., 1907. Nos. 252, 254.

The Blackbird is rare in the cultivated districts and I only saw it in winter. Severtzoff mentions it as breeding in the northern part of Turkestan, and these are probably the birds that winter in the Zarafshan Valley. The wing-measurements are remarkably long, namely, 5·38, 5·25, and 5·20 inches.

### 85. ACCENTOR ATRIGULARIS.

*Accentor atrigularis* Sharpe, Cat. B. vii. p. 656.

♀. Samarkand. 18 Jan., 6 Feb., 1908. Nos. 266, 273.

Sex doubtful. Samarkand. 18 Jan., 1908. No. 267.

I only once came across this Accentor, during a very hard spell of snowy weather in January. The birds were feeding on the ground in a poplar grove, when I shot them.

86. *RUTICILLA RUFIVENTRIS*.

*Ruticilla rufiventris* Seebohm, Cat. B. v. p. 342.

♂. Samarkand. 25 April, 1908. No. 358.

♂. Hissar Mts. 20 June, 1908. Nos. 543, 542.

♂ imm. Samarkand. 23 Oct., 1907. Nos. 111, 109, 110.

♀. Samarkand. 15-23 Oct., 1907. Nos. 113, 95, 75, 112.

Common on the rocky foot-hills of Zarafschan, and breeding at 9000 ft. in the Hissar Range.

87. *RUTICILLA ERYTHRONOTA*.

*Ruticilla erythronota* Seebohm, Cat. B. v. p. 348.

♂. Samarkand. 19 Oct., 1907. No. 91.

♀. „ 21-22 Oct., 1907. Nos. 105, 96.

♀. „ 6 March, 1908. No. 277.

88. *RUTICILLA CÆRULEOCEPHALA*.

*Ruticilla cæruleocephala* Seebohm, Cat. B. v. p. 353.

♂. Hissar Mts. 14-24 June, 1908. Nos. 570, 571, 525, 569, 544.

♀. Hissar Mts. 16-20 June, 1908. Nos. 558, 567.

This is a common bird in the juniper-forests from 9000 to 9500 ft. in the Hissar Mts. It breeds in June, making a nest of grass on the ground, under the stump of a tree, composed of grass and moss, lined with a few feathers. The birds were sitting on eggs on the 18th of June. They appear to keep entirely to the forests, where they haunt the thickets, and are not to be met with on the open rocky slopes.

89. *DAULIAS HAFIZI*.

*Erithacus golzii* Seebohm, Cat. B. v. p. 297.

♂. Samarkand. Sept. 1907. Nos. 13, 36.

♂. „ 6 May, 1908. No. 429.

♀. „ 9 Sept., 1907. No. 19.

Sex doubtful. Samarkand. 6 May, 1908. No. 428.

This bird arrives at the end of April in the Samarkand district, but apparently breeds only at a slightly higher altitude. In June there were no Nightingales singing in the neighbourhood of Samarkand, but in the higher part of the Zarafschan Valley at 4000 ft. there were many.

## 90. CYANECULA SUECICA.

*Erithacus cæruleculus* Seebohm, Cat. B. v. p. 309.

♂. Samarkand. 11 Oct., 1907. No. 59.

♂ imm. Samarkand. 7 Oct., 1907. No. 53.

♀ imm. „ 15 Oct., 1907. No. 73.

♀. Samarkand. 18 April, 1908. No. 343.

This bird passes through the Zarafshan Valley on its spring and autumnal migrations.

## 91. PRATINCOLA MAURA.

*Pratincola maura* Sharpe, Cat. B. iv. p. 188.

♂. Samarkand. 25 April, 1908. Nos. 359, 360.

♂. „ 6 May, 1908. No. 430.

♂ imm. Samarkand. 14 Sept., 1907. No. 44.

♂ imm. „ 18 Nov., 18 Oct., 1907. Nos.  
195, 86.

♀. Samarkand. 18 Oct., 1907. No. 87.

♀. „ 3 May, 1908. No. 405.

A summer migrant, and fairly common up to 4000 ft.

## 92. SAXICOLA ŒNANTHE.

*Saxicola œnanthe* Seebohm, Cat. B. v. p. 391.

♂. Hissar Mts. 24 June, 1908. Nos. 605, 606.

The only occasion on which I found the Common Wheatear was at a height of 9000 ft. in the Hissar Mts., where it was evidently breeding.

## 93. SAXICOLA ISABELLINA.

*Saxicola isabellina* Seebohm, Cat. B. v. p. 399.

♂. Samarkand. 18 Oct., 1907. No. 85.

♂. Bokhara. 22 March, 1908. No. 314.

♂. Hissar Mts. 24 June, 1908. No. 598.

♂. „ 24 June, 1908. No. 597.

♀. Bokhara. 22 March, 1908. No. 313.

♀. „ 14 March, 1908. No. 284.

♀. Samarkand. 18 Oct., 1907. No. 84.

♀. Hissar Mts. 20 June, 1908. No. 556.

♀. Samarkand. 15 Oct., 1907. No. 72.

The common Wheatear of the Zarafshan Valley is

*S. isabellina*. *S. aenante* was only obtained high up in the mountains. *S. isabellina* is common from the Bokharan deserts, at an altitude of 500 ft., up to the Samarkand steppe at 2500 ft. I also found it breeding in small numbers at 9500 ft. in the Hissar Mts.

Severtzoff mentions that he found *S. isabellina* common in the high Pamirs, where it bred.

It is a summer visitor to the Zarafschan Valley, arriving in mid-March.

#### 94. SAXICOLA MORIO.

*Saxicola morio* Seebohm, Cat. B. v. p. 372.

- ♂. Samarkand. 19 April, 1908. No. 348.  
 ♂. „ 12 April, 1908. Nos. 333, 334, 335.  
 ♂. Bokhara. 14 March, 1908. Nos. 289, 290.  
 ♂. „ 24 March, 1908. No. 322.  
 ♂. Samarkand. 25 April, 1908. No. 379.  
 ♂. „ 19 Oct., 1907. No. 93.  
 ♂. „ 25 Oct., 1907. No. 120.  
 ♂. „ 23 Oct., 1907. No. 114.  
 ♀. „ 19 Oct., 1907. No. 94.  
 ♀. „ 15 Oct., 1907. No. 70.  
 ♀. Bokhara. 20 May, 1908. No. 480.  
 ♀. Samarkand. 10 May, 1908. No. 444.

The commonest Chat in the Zarafschan Valley is *S. morio*. Arriving in mid-March on the lower deserts and in April on the higher country, it breeds in localities varying from 500 to 4000 ft. in altitude. I have rarely seen it as high as 8000 ft.

On the 10th May I took a nest of this Chat, at 4000 ft. on the hills near Samarkand. The nest was placed under a rock, and was made entirely of grass, lined with hair. These Chats pass southwards during October in great numbers.

#### 95. SAXICOLA OPISTHOLEUCA.

*Saxicola opistholeuca* Seebohm, Cat. B. v. p. 376.

- ♂. Samarkand. 1 May, 1908. No. 388.

A very rare bird in these regions. I only saw two specimens during the whole year.

96. *SAXICOLA FINSCHI*.

*Saxicola finschii* Seebohm, Cat. B. v. p. 388.

♀. Samarkand. 12 April, 1908. No. 332.

♀. „ 1 May, 1908. No. 393.

A summer visitor. It breeds in the hills near Samarkand at 3000 ft.

97. *SAXICOLA DESERTI*.

*Saxicola deserti* Seebohm, Cat. B. v. p. 383.

♂. Bokhara. 22 March, 1908. No. 312.

♂. „ 21 March, 1908. No. 302.

♂. „ 21 March, 1908. No. 301.

♂. „ 21 March, 1908. No. 300.

♂. Samarkand. 19 Oct., 1907. No. 92.

♀. Bokhara. 21 March, 1908. No. 303.

♀. Samarkand. 11 Oct., 1907. No. 68.

A summer migrant to the Zarafschan Valley, arriving suddenly on the lower deserts in great numbers in the middle of March.

98. *CINCLUS LEUCOGASTER*.

*Cinclus leucogaster* Sharpe, Cat. B. vi. p. 314.

♀. Samarkand. 29 Oct., 1907. Nos. 136, 135.

♀. „ 14 Dec., 1907. Nos. 230, 229, 232,  
228.

Sex doubtful. Samarkand. 29 Oct., 1907. No. 137.

This is the common Dipper of the Zarafschan Valley between 2000 and 5000 ft. Below 2000 ft. there are no Dippers at all, and above 5000 ft. the Brown Dipper takes its place. They are chiefly to be found on the highest portions of the little mountain torrents, and not on the larger rivers. They are most common at 4000 ft.

99. *CINCLUS ASIATICUS*.

*Cinclus asiaticus* Sharpe, Cat. B. vi. p. 314.

♀ imm. Hissar Mts. 20 June, 1908. No. 586.

The common Dipper of the higher mountains is *C. asiaticus*

ranging from about 4500 to 9000 ft. In June there were any number of young birds about, so much so that it was difficult to find any old ones.

100. TROGLODYTES PALLIDUS.

*Anorthura pallida* Sharpe, Cat. B. vi. p. 273.

♂. Hills near Samarkand. 25 Oct.–19 Dec., 1907.  
Nos. 106, 118, 144, 239.

♀. Hills near Samarkand. 22 Oct. – 19 Dec., 1907.  
Nos. 102, 103, 119, 238, 240.

This Wren is most common in the rocky mountain-gorges in very barren country ; but it is occasionally found in the reed-beds of the Zarafschan River.

101. MYIOPHONEUS TEMMINCKI.

*Myiophoneus temmincki* Sharpe, Cat. B. vii. p. 7.

♂. Hissar Mts. 20, 23 June, 1908. Nos. 590, 589.

♀. „ 23 June, 1908. Nos. 591, 595.

♀. Samarkand. 15 Oct., 1907. No. 79.

The Himalayan Whistling Thrush is found somewhat rarely in the steep gorges of the Hissar Range. I have seen it as low as 3000 ft., but it usually haunts the torrents and ravines at about 7000 ft. It nests in the cracks of the rocks, and by June 20th the young are fully fledged. The male bird has a most curious little warble, not unlike that of a Blackcap.

Severtzoff records this bird as far north as the Tian Shan Mts.

102. MUSCICAPA GRISOLA.

*Muscicapa grisola* Sharpe, Cat. B. iv. p. 151.

♂. Samarkand. 8 Sept., 1907. No. 11.

Sex doubtful. Samarkand. 8 Sept., 1907. No. 1.

A summer migrant, arriving during the middle of May.

103. MUSCICAPA PARVA.

*Muscicapa parva* Sharpe, Cat. B. iv. p. 161.

♂. Samarkand. 10 April, 1908. Nos. 329, 330.

A rare bird and not often met with in this district.

## 104. COTILE RUPESTRIS.

*Cotile rupestris* Sharpe, Cat. B. x. p. 109.

♂. Samarkand. 19 April, 1908. Nos. 346, 347.

Small flocks of this Swallow are found very locally in the mountains at about 6000 ft.

## 105. DENDROCOPUS LEUCOPTERUS.

*Dendrocopus leucopterus* Hargitt, Cat. B. xviii. p. 215.

♂. Samarkand. Oct., Dec., 1907. Nos. 138, 148, 253.

♀. „ Oct., Nov., 1907. Nos. 147, 150, 151,  
152.

This Woodpecker is a common resident in the cultivated area from 600 to 3000 ft., and is especially numerous at 2000 ft. The numbers that inhabit the Vale of Samarkand are greatly increased during the winter months. Probably the winter visitors are those that naturally range over northern and north-eastern Turkestan, but, finding the winters too severe there, come south to the sheltered Zarafshan Valley.

## 106. IYNX TORQUILLA.

*Iynx torquilla* Hargitt, Cat. B. xviii. p. 560.

♀. Hissar Mts. 25 April, 1908. No. 380.

## 107. CUCULUS CANORUS.

*Cuculus canorus* Shelley, Cat. B. xix. p. 245.

♂. Samarkand. 6 May, 1908. No. 436.

♀. „ 6 May, 1908. No. 437.

The Common Cuckoo arrives in the first week in May, and is very common during the summer all over the cultivated region.

## 108. CAPRIMULGUS EUROPEUS.

*Caprimulgus europæus* Hartert, Cat. B. xvi. p. 526.

♂. Bokhara. 20 May, 1908. No. 489.

♂ imm. Bokhara. 14 Nov., 1907. No. 171.

## 109. UPUPA EPOPS.

*Upupa epops* Salvin, Cat. B. xvi. p. 4.

♀. Samarkand. 8 Sept., 1907. No. 14.

This Hoopoe is very common in spring and summer, and

breeds in the holes of the walnut trees. In winter the vast majority go south, but I observed a few in Samarkand on the 29th of January, when snow was on the ground.

110. *MEROPS APIASTER.*

*Merops apiaster* Sharpe, Cat. B. xvii. p. 63.

♀ imm. Samarkand. 15 Sept., 1907. No. 45.

The Bee-eater arrives during the first week in May: the majority pass the Zarafschan Valley and go further north to breed, but some remain.

111. *CORACIAS GARRULUS.*

*Coracias garrulus* Sharpe, Cat. B. xvii. p. 15.

♀. Samarkand. 1 May, 1908. No. 395.

Rollers begin to arrive on the 1st of May, and are very common all the summer. They breed in the loëss cliffs.

112. *ALCEDO ISPIDA.*

*Alcedo ispida* Sharpe, Cat. B. xvii. p. 141.

♂. Samarkand. 29 Oct., 1907. No. 141.

♀. „ 29 Oct., 1907. No. 133.

This Kingfisher is common on the Zarafschan River itself at about 2000 ft., and also on the small mountain streams up to 4500 ft.

113. *CYPSELUS MELBA.*

*Micropus melba* Hartert, Cat. B. xvi. p. 439.

♀. Samarkand. 3 May, 1908. No. 400.

This Swift is a summer visitor, arriving in Samarkand in great numbers on the 2nd of April. Here they haunt the ruined mosques and madresahs, where they breed. They also breed at 4000 ft. in the neighbouring hills, early in May. By the 6th of November they have all gone south again.

114. *ASIO ACCIPITRINUS.*

*Asio accipitrinus* Sharpe, Cat. B. ii. p. 234.

♂. Samarkand. 22 Dec., 1907. No. 249.

♂. Bokhara. 4 Dec., 1907. No. 208.

This Owl is a common bird in the tamarisk-covered sand-dunes of Bokhara during the winter.



## 115. ATHENE BACTRIANA.

*Athene bactriana* Sharpe, Cat. B. ii. p. 137.

♂. Samarkand. 23, 24 Oct., 1907. Nos. 108, 116.

♂. „ 19 Dec., 1907. No. 245.

♂. „ 14 April, 1908. No. 338.

This is a common bird on the barren foot-hills, but I only observed it from 1000 to 3000 ft. All my specimens have the legs and toes densely feathered to the base of the claws.

## 116. SCOPS BRUCII.

*Scops brucii* Sharpe, Cat. B. ii. p. 62.

♂. Samarkand. 8 Sept., 1907. No. 10.

A rare resident in the cultivated region, wherever there are groves of trees.

Severtzoff does not mention this very well-defined subspecies of *Scops giu*.

## 117. CIRCUS CYANEUS.

*Circus cyaneus* Sharpe, Cat. B. i. p. 52.

♂. Bokhara. 14 Nov., 1907. No. 172.

♀ „ 19 March, 1908. No. 304.

## 118. BUTEO FEROX.

*Buteo ferox* Sharpe, Cat. B. i. p. 176.

♂. Samarkand. 15 Oct., 1907. No. 80.

The autumnal migration of Birds-of-Prey is very noticeable in the Zarafschan Valley. In October large numbers pass over, going southwards.

## 119. ASTUR BADIUS.

*Astur badius* Sharpe, Cat. B. i. p. 109.

♂. Samarkand. 9 Sept., 1907. No. 17.

♂ imm. Samarkand. 1 May, 1908. No. 398.

♀. Bokhara. 20 May, 1908. No. 493.

This is the commonest Sparrow-Hawk of the country, being found wherever the cultivation includes groves of trees and thickets. It breeds in May as low as 600 ft. The natives train Sparrow-Hawks, chiefly in order to fly at Quails. But I cannot decide whether it is this species

or *A. nisus* that they use. Very probably it is this species, for it is an even more courageous bird than the Common Sparrow-Hawk.

120. ACCIPITER NISUS.

*Accipiter nisus* Sharpe, Cat. B i. p. 132.

♂. Samarkand. 12 April, 1908. No. 336.

This species is much more rare than *Astur badius* in the Zarafschan Valley.

121. PERNIS APIVORUS.

*Pernis apivorus* Sharpe, Cat. B. i. p. 344.

♂. Samarkand. 19 Oct., 1907. No. 90.

This is, apparently, a rare bird in Central Asia. Severtzoff only records one specimen.

122. MILVUS MIGRANS.

*Milvus korschun* Sharpe, Cat. B. i. p. 322.

♀. Samarkand. 14 April, 1908. No. 342.

This is a common bird around the native towns, in the cultivated districts.

123. FALCO SUBBUTEO.

*Falco subbuteo* Sharpe, Cat. B. i. p. 315.

♀. Samarkand. 12 Sept., 1907. No. 38.

The Hobby is a summer migrant in the Zarafschan.

124. FALCO CENCHRIS.

*Cerchneis naumanni* Sharpe, Cat. B. i. p. 437.

♂. Samarkand. 1 May, 1908. No. 394.

♂ imm. Samarkand. 11 Sept., 1907. No. 29.

This Kestrel is exceedingly common in spring on the migration, but few remain to breed. It first appears in mid-April.

125. ANSER RUBRIROSTRIS.

*Anser rubrirostris* Salvad. Cat. B. xxvii. p. 91.

♀. Bokhara. 6 Dec., 1907. No. 213.

These Geese are winter migrants to the lakes formed by the Zarafschan in the Bokhara steppes. They congregate in enormous numbers, but have all left by the 20th of March.

Bill bright pink, horny-nail white, base of lower mandible paler, base of bill orange-red.

126. NETTION CRECCA.

*Nettion crecca* Salvad. Cat. B. xxvii. p. 243.

♂. Bokhara. 18 March, 1908. No. 298.

♀. Samarkand. 18 Oct., 1907. No. 83.

The Teal is a winter visitor to the Zarafschan, but also passes the lower course of the river in mid-March in large flocks migrating north. Incredible numbers collect on the small lakes of the steppe at night.

127. MARECA PENELOPE.

*Mareca penelope* Salvad. Cat. B. xxvii. p. 227.

♂. Bokhara. 24 March, 1908. No. 324.

♀. Samarkand. 30 Oct., 1907. No. 133.

This a winter migrant to the Zarafschan River.

128. FULIGULA FERINA.

*Nyroca ferina* Salvad. Cat. B. xxvii. p. 335.

♂. Bokhara. 18 March, 1908. No. 296.

♀. „ 18 March, 1908. No. 297.

The Pochard passes the lower Zarafschan in immense numbers on its northward migration in the middle of March.

129. MERGUS ALBELLUS.

*Mergus albellus* Salvad. Cat. B. xxvii. p. 464.

♀. Bokhara. 4-8 Dec., 1907. Nos. 206, 225.

The Smew is very common on the lower Zarafschan in winter.

130. ÆGIALITIS CURONICA.

*Ægialitis dubia* Sharpe, Cat. B. xxiv. p. 263.

♂. Bokhara. 20 May, 1908. No. 495.

131. TOTANUS OCHROPUS.

*Helodromus ochropus* Sharpe, Cat. B. xxiv. p. 437.

♀. Samarkand. 18 Nov., 1907. No. 194.

132. LARUS RIDIBUNDUS.

*Larus ridibundus* Saunders, Cat. B. xxv. p. 207.

♂. Bokhara. 14, 22 March, 1908. Nos. 281, 316.

## 133. STERNA ANGLICA.

*Gelochelidon anglica* Saunders, Cat. B. xxv. p. 25.

♂. Bokhara. 15 May, 1908. No. 451.

♀. „ 18 May, 1908. No. 468.

This Tern breeds on the lower Zarafschan.

## 134. STERNA MINUTA.

*Sterna minuta* Saunders, Cat. B. xxv. p. 116.

♂. Bokhara. 20 May, 1908. No. 497.

## 135. RALLUS AQUATICUS.

*Rallus aquaticus* Sharpe, Cat. B. xxiii. p. 20.

♂. Samarkand. 19 Dec., 1907. No. 244.

## 136. PORZANA PUSILLA.

*Porzana pusilla* Sharpe, Cat. B. xxiii. p. 106.

♂ imm. Samarkand. 29 Oct., 1907. No. 139.

This is a young bird, lacking all the slate-colour on the under parts.

## 137. COLUMBA INTERMEDIA.

*Columba intermedia* Strickl.; Salvad. Cat. B. xxi. p. 259.

♂. Samarkand. 17 Nov., 1907. No. 193.

♀. Hissar Mts. 23 June, 1908. No. 581.

This Pigeon is common in the foot-hills and loëss cliffs. It is numerous at about 2000 ft., but occasionally goes up to 9000 ft. Above this its place is taken by *C. rupestris*.

## 138. COLUMBA RUPESTRIS.

*Columba rupestris* Salvad. Cat. B. xxi. p. 250.

♂. Hissar Mts. 20 June, 1908. Nos. 575, 576.

♀. „ 20 June, 1908. Nos. 577, 578.

This Pigeon is peculiar to the mountain ranges, from 8000 to 10,000 ft.

## 139. TURTUR COMMUNIS.

*Turtur communis* Salvad. Cat. B. xxi. p. 397.

♂. Samarkand. 4 June, 1908. No. 519.

♂. Bokhara. May, 1908. Nos. 453, 454, 488.

This Dove is a summer migrant to the Zarafschan Valley, ranging from 600 ft. up to 4000 ft. The first arrivals take place during the first week in May.

## 140. TURTUR FERRAGO.

*Turtur ferrago* Salvad. Cat. B. xxi. p. 401.

♂. Hissar Mts. 24 June, 1908. Nos. 579, 596, 604.

This Dove takes the place of *T. communis* in the high mountains. It is confined to an area of from 8000 to 10,000 ft.

## 141. TURTUR CAMBAYENSIS.

*Turtur cambayensis* Salvad. Cat. B. xxi. p. 452.

♂. Samarkand. Sept., Oct., Nov., 1907. Nos. 34, 65, 188.

♀. „ „ Sept., Nov., 1907. Nos. 35, 189.

A common resident in the cultivated regions from 600 ft. to 3000 ft. It is very tame and confiding, and is always to be seen in the courtyards of the native houses.

Severtzoff only mentions *Turtur senegalensis*, but all my specimens belong to the nearly allied *T. cambayensis*, having the rump like the back—earthy-brown. Numbers 34 and 65, however, have the rump partly earthy-brown and partly bluish.

## 142. PTEROCLES ARENARIUS.

*Pterocles arenarius* Ogilvie-Grant, Cat. B. xxii. p. 19.

♂. Samarkand. 21 Nov., 1907. No. 199.

♀. „ „ „ No. 200.

This Sandgrouse is common on the steppes from 600 ft. up to 2500 ft.

## 143. PTEROCLES ALCHATA.

*Pterochurus alchata* Ogilvie-Grant, Cat. B. xxii. p. 7.

♂. Samarkand. 30 April, 1908. No. 385.

♀. Bokhara. 22 March, 1908. No. 305.

In spring I saw incredible numbers of the Pin-tailed Sandgrouse passing Bokhara as if on migration. For many days immense flocks of these birds crossed overhead continually, going in a south-easterly direction.

It appears that the Karshi steppes, S.E. of Bokhara, are the first to become green in the spring, and thither the native shepherds drive their valuable flocks of Kara-Kul or 'Astrakhan' sheep. It seems that the Sandgrouse also

know of the good food that is to be obtained there at an early date, and migrate thither from the more northerly and foodless steppes.

144. SYRRHAPTES PARADOXUS.

*Syrrhaptes paradoxus* Ogilvie-Grant, Cat. B. xxii. p. 2.

♂. Bokhara. 4 Dec., 1907. No. 212.

This species is found in immense numbers, at certain seasons, on the low steppes. It does not appear to frequent the higher steppe-valleys, like *Pterocles arenarius*.

145. PHASIANUS ZERAFSHANICUS. (Plate VIII.)

*Phasianus zerafshanicus* Ogilvie-Grant, Cat. B. xxii. p. 326.

♂. Bokhara. 18 May, 1908. No. 496.

♂. „ 4 June, 1908. No. 518.

♂. Samarkand. 11 Oct., 1907. No. 67.

♂. Bokhara. 16 Nov., 1907. Nos. 161, 163, 164.

♀. „ 16 Nov., 1907. No. 162.

The excellent coloured figure from which the accompanying plate (Pl. VIII.) is taken was drawn by Major Jones, to whom my best thanks are due.

This Pheasant, peculiar to the self-contained basin of the Zarafschan River, is found wherever there is jungle, both in the cultivated area and in the tamarisk swamps. It is most numerous on the lowest portion of the river, especially where it forms small lakes and swamps in the Bokharan deserts. It ranges as far east as Samarkand at 2000 ft.

The Zarafschan is a self-contained basin, and the Pheasants are confined to this river-valley, not being able to wander and mix with those of the Oxus, or the Syr Daria Valleys.

Although the Zarafschan approaches to within thirty or forty miles of the Oxus, yet those thirty miles form an impassable barrier of barren sand-dunes.

In May and June these birds lose most of the vinous tinge on the breast and abdomen, and the upper parts become very pale and 'washed out,' the margins to the feathers being pale buff instead of a rich golden copper colour.



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PHASIANUS ZERAFSHANICUS, ♂ & ♀.

## 146. TETRAOGALLUS HIMALAYENSIS.

*Tetraogallus himalayensis* Ogilvie-Grant, Cat. B. xxii. p. 106.

♂. Hissar Mts. 1 May, 1908. No. 399.

The Himalayan Snow-cock extends into the Hissar mountains and is to be found in fair numbers within a few days' journey of Samarkand. This is probably their most westerly range, and they do not descend below 10,000 ft. in summer.

The Snow-cock is highly prized by the natives of Turkestan as a fighting bird. Cock-fighting is one of their chief pastimes, but Quails, Chucar Partridges, and even Snow-cocks are also employed.

Its native name is 'Ulah.'

## 147. CACCABIS CHUCAR.

*Caccabis chucar* Ogilvie-Grant, Cat. B. xxii. p. 113.

♂. Samarkand. May, 1908. Nos. 417, 418.

♀. „ May, 1908. No. 419.

Wherever there are rocky hills, from 1000 up to 10,000 ft., the Chucar Partridge is found in great numbers.

Having collected specimens of *C. chucar* in different localities, from the low, hot, Dead Sea basin at 1300 ft. below the level of the ocean, up to 10,000 ft. above in Central Asia, I have not been able to notice any constant variation, either in plumage or size, in birds from the different altitudes.

These specimens are of the light variety, being found on barren rocky hills, and probably correspond with the Afghanistan and Persian forms rather than with those of the Himalayas and Tian Shan.

## APPENDIX.

Examples of the following birds were obtained in the Zarafschan Valley, and the species were determined, but the specimens were not brought home.

## 1. CORVUS CORAX Linn.

Samarkand. 22 Oct., 1907.



2. *AMPELIS GARRULUS* Linn.

Samarkand. 5 Feb., 1908.

3. *LIGURINUS CHLORIS* (Linn.).

Samarkand. 4 March, 1908.

4. *MELANOCORYPHA YELTONIENSIS* Forst.

Large flocks of this Lark were observed near the Sea of Aral in August.

5. *HIRUNDO RUSTICA* Linn.

Arrives in Samarkand in the middle of April. A summer visitor only.

6. *CYPSELUS APUS* (Linn.).7. *GYPVS FULVVS* (Gmel.).8. *NEOPHRON PERCNOPTERVS* (Linn.).

Common round Samarkand.

9. *GYPÆTUS BARBATUS* (Linn.).

Hissar Mts. Not seen lower than 7000 ft.

10. *AQUILA CHRYSÆTUS* (Linn.).

Samarkand. 11 Jan., 1908.

11. *FALCO CHERRUG* Gray.

Samarkand. 15 Dec., 1907.

12. *BUBO TURCOMANUS* Eversm.

On several occasions I heard Eagle Owls at night in the hills near Samarkand, and once I saw a pair on the tamarisk-covered sand-hills between Bokhara and the Oxus. According to Severtzoff they range from the Bokharan deserts up to the Pamirs.

13. *PHENICOPTERUS ROSEUS* Pall.

Samarkand. 4 Nov., 1907.

14. *ANAS BOSCAS* Linn.

Bokhara. 4 Dec., 1907. Very numerous in winter.

15. *ARDEA ALBA* Linn.

Samarkand. Nov., 1907.

16. NYCTICORAX GRISEUS Linn.

Samarkand. 7 June, 1908.

17. BOTAURUS STELLARIS Linn.

Samarkand. 19 Dec., 1907.

18. CICONIA ALBA Bechst.

This is a summer migrant to the Zarafschan Valley, where it breeds in May, building in the trees and on the minarets and domes of the mosques.

19. TOTANUS CALIDRIS Linn.

Samarkand. 10 Oct., 1907, and 7 June, 1908.

20. GALLINAGO CÆLESTIS (Frenzel).

Samarkand. 25 Oct., 1907.

21. OTIS TARDA Linn.

Bokhara. 7 Nov., 1907. A winter migrant.

22. COTURNIX COMMUNIS Bonn.

A very common summer visitor, but occasionally met with also in winter. The birds are captured in great quantities by the natives, and used for fighting purposes.

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XXI.—*On a Collection of Birds from the Dead Sea and North-western Arabia, with Contributions to the Ornithology of Syria and Palestine.* By DOUGLAS CARRUTHERS, F.R.G.S., M.B.O.U.

(Plate IX. and Text-figure 5.)

DURING the journeys which I made in the early part of 1909 to the Dead Sea, the uplands of Moab, and the deserts of North-western Arabia, I formed a small collection of birds, and made a certain number of notes on the ornithology of these little-known countries. Scarcely any work has been done in these districts since Tristram's day, and the range of his explorations extended no further than the Land of Moab. Indeed, I cannot find that any ornithologist has penetrated into the country lying to the south-east, towards the Hedjaz provinces of Arabia.